

TRANSLATION

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 88021 WO PA-RIX	FOR FURTHER ACTION	See Form PCT/IPEA/416
International application No. PCT/EP2004/009614	International filing date (<i>day/month/year</i>) 28.08.2004	Priority date (<i>day/month/year</i>) 26.09.2003
International Patent Classification (IPC) or national classification and IPC B62D1 1/14, B62D11/O4		
Applicant ZF FRIEDRICHSHAFEN AG		

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of <u>6</u> sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising: a. <input type="checkbox"/> (<i>sent to the applicant and to the International Bureau</i>) a total of _____ sheets, as follows: <input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions). <input type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box. b. <input type="checkbox"/> (<i>sent to the International Bureau only</i>) a total of (indicate type and number of electronic carrier(s)) _____, containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).
4. This report contains indications relating to the following items: <input checked="" type="checkbox"/> Box No. I Basis of the report <input type="checkbox"/> Box No. II Priority <input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability <input type="checkbox"/> Box No. IV Lack of unity of invention <input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement <input type="checkbox"/> Box No. VI Certain documents cited <input type="checkbox"/> Box No. VII Certain defects in the international application <input type="checkbox"/> Box No. VIII Certain observations on the international application

Date of submission of the demand	Date of completion of this report
Name and mailing address of the IPEA/EP	Authorized officer
Facsimile No.	Telephone No.

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Box No. I Basis of the report

1. With regard to the language, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language _____, which is the language of a translation furnished for the purposes of:
- ☐ international search (Rule 12.3 and 23.1(b))
- ☐ publication of the international application (Rule 12.4)
- ☐ international preliminary examination (Rule 55.2 and/or 55.3)
2. With regard to the elements of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:
- ☐ the international application as originally filed/furnished
- ☒ the description:
- pages 1-8 _____ as originally filed/furnished
- pages* _____ received by this Authority on _____
- pages* _____ received by this Authority on _____
- ☒ the claims:
- nos. 1-5 _____ as originally filed/furnished
- nos.* _____ as amended (together with any statement) under Article 19
- nos.* _____ received by this Authority on _____
- nos.* _____ received by this Authority on _____
- ☒ the drawings:
- sheets 1/1 _____ as originally filed/furnished
- sheets* _____ received by this Authority on _____
- sheets* _____ received by this Authority on _____
- ☐ a sequence listing and/or any related table(s) – see Supplemental Box Relating to Sequence Listing.
3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages _____
- ☐ the claims, nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to sequence listing (*specify*): _____
4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages _____
- ☐ the claims, nos. _____
- ☐ the drawings, sheets/figs _____
- ☐ the sequence listing (*specify*): _____
- ☐ any table(s) related to sequence listing (*specify*): _____

* If item 4 applies, some or all of those sheets may be marked "superseded."

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Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement		
1.	Statement		
	Novelty (N)	Claims <u>1-5</u>	YES
		Claims _____	NO
	Inventive step (IS)	Claims <u>1-5</u>	YES
		Claims _____	NO
	Industrial applicability (IA)	Claims <u>1-5</u>	YES
		Claims _____	NO
2.	Citations and explanations (Rule 70.7)		
1	This report makes reference to the following document:		
	D1: US 5 445 234 A (HALL III ARTHUR) 29 August 1995 (1995-08-29)		
2	Document D1 is considered the closest prior art and discloses (the references between parentheses refer to that document):		
	<p>electric drive system for a vehicle with skid steering (fig. 1, ref. 10), comprising at least one left and one equivalent right electric drive machine (fig. 1, refs. 12, 14), an electrical energy source (fig. 1, ref. 38), an electronic control device (fig. 1, refs. 46A, 46B) for independently delivering torque to the left and right drive machines (column 2, lines 5-29), a left summarising gear (fig. 1, ref. 16), which comprises a left output component (fig. 1, ref. 24) which is connected to a left drive wheel or to a left track chain, a first left transmission component (fig. 1, refs. 62A, 52A)</p>		

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	<p>which is connected to the left drive machine (fig. 1, ref. 12), and a second left transmission component (fig. 1, ref. 56A), and an equivalent right summarising gear (fig. 1, ref. 14), which comprises a right output component (fig. 1, ref. 26), which is connected to a right drive wheel or to a right track chain, a first right transmission component (fig. 1, refs. 62B, 52B) which is connected to the right drive machine (fig. 1, ref. 14), and a second right transmission component (fig. 1, ref. 56B), and the first left transmission component (fig. 1, ref. 52A) being drivingly indirectly (via a differential gear (fig. 1, ref. 20)) connected to the first right transmission component (fig. 1, ref. 52B) by way of a first mechanical gear train (fig. 1, refs. 52A, 54A, 56A, 64) .</p> <p>from which the subject matter of independent claim 1 differs in that:</p> <p>the first left transmission component is drivingly directly connected to the second right transmission component by way of a first mechanical gear train and in that the first right transmission component is drivingly directly connected to the second left transmission component by way of a second mechanical gear train.</p> <p>2.1 The subject matter of claim 1 is thus novel (PCT Article 33(2)).</p>

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	<p>The current invention addresses the problem of developing a drive system for a vehicle with skid steering as per D1, but without a differential gear.</p> <p>The number of parts should therefore be reduced in comparison with the system according to D1.</p> <p>2.2 The solution to this problem as proposed in claim 1 of the present application involves an inventive step (PCT Article 33(3)) for the following reasons:</p> <p>It is not possible without being inventive to find a solution to the above problem in which the first left transmission component is drivingly directly connected to the second right transmission component by way of a first mechanical gear train and in which the first right transmission component is drivingly directly connected to the second left transmission component by way of a second mechanical gear train, this also not following from a simple combination of the disclosures of the available prior art documents.</p> <p>The two gear trains are thus each drivingly directly connected to one another cross-wise between various transmission components of the two summarising gears and thus without the use of a compensating element such as a differential gear.</p>

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2.3	Claims 2-5 are dependent on claim 1 and therefore likewise meet the PCT requirements for novelty and inventive step.